

Remarks

Applicant's response to the final Office Action mailed June 7, 2010 is below. Claims 1-19 are currently pending in the application. Claims 1, 6, 9, 11, 16, and 18 have been amended through this Response, without adding new matter. Claims 8, 15 and 17 have been canceled. Upon entry of these amendments, claims 1-7, 9-14, 16, 18, and 19 will be pending in the application.

I. Claim Rejections – 35 U.S.C. § 103

Claims 1-3, 5-7, 9-16, 18 and 19 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,899,941 to Nishijima *et al.* ("*Nishijima*") in view of U.S. Publication No. 2004/0010316 to William *et al.* ("*William*"), and claims 8 and 17 were rejected as unpatentable over *Nishijima* and *William* in view of U.S. Patent No. 6,322,588 to Ogle *et al.* ("*Ogle*"). Through this Response, claims 1 and 11, the pending independent claims, have been amended to incorporate subject matter previously recited in claims 8 and 17 respectively. Thus, the rejection over *Nishijima* and *William* has been rendered moot. The rejection over *Nishijima* and *William* in view of *Olge* is traversed below.

Claim 1 recites an intervertebral disc prosthesis that includes two base parts coupled to one another by means of coupling parts, one of the coupling parts having a sliding surface and the other coupling part having a countersliding surface. The sliding and countersliding surfaces are coated in a coating material based on a chromium-nickel alloy. The chromium-nickel alloy coating material is included on the sliding and countersliding surfaces to achieve a high abrasion resistance. *Applicant's Specification*; [0016].

The cited combination of references does not teach, suggest, or otherwise render obvious a prosthesis having sliding and countersliding surfaces coated in the claimed coating material. The Office Action alleges that a person of skill in the art could have arrived at the claimed prosthesis by coating the sliding and countersliding surfaces alleged to be taught by the combination of *Nishijima* and *William* with the coating material alleged to be taught by *Olge*. Applicant traverses. *Olge* teaches a medical device that includes a relatively thick coating on its surface to increase its mechanical properties, such as its mechanical strength, durability, and resiliency. *See Olge*; column 2, lines 20-34. The *Olge* coating also may improve the rigidity of the implant, may compensate for minor variations in the structure or geometry of the implant, or may improve the biocompatibility of the implant. *See Olge*; column 2, lines 41-43, lines 53-55, lines 59-62. From this disclosure, a person of skill in the art would not have known that the abrasion resistance of sliding and countersliding surfaces in an intervertebral disc prosthesis could be increased by applying a coating material based on chromium-nickel alloy, and the properties of the coating disclose in *Olge* would not address any need not already addressed by the combination of *Nishijima* nor *William*. Therefore the claimed prosthesis would not have been obvious.

Further, it is not clear that *Olge* even teaches the claimed coating material based on a chromium-nickel alloy. The Office Action relies on the following passage of *Olge* for such a teaching:

Preferred metals for inclusion as a coating in the composite are biocompatible. In other words, the metals are suitable for contacting a patient's bodily fluids or tissue. One class of biocompatible metals are essentially inert and stable in contact with the patient's blood stream. Such inert metals include, for example, titanium, cobalt, stainless steel, nickel, iron alloys, cobalt alloys, such as Elgiloy®, a cobalt-chromium-nickel alloy, and MP35N, a nickel-cobalt-chromium-molybdenum alloy, and Nitinol®, a nickel-titanium alloy.

Olge; col. 4, lns. 13-23. Notably, the claimed alloy, chromium-nickel alloy, is not included among the list of coating materials identified in *Olge*. It appears that *Olge* either did not contemplate using chromium-nickel alloy coating materials or that *Olge* purposefully excluded such coating materials.

Olge teaches making the coating material from (i) certain specific metals, such as cobalt or nickel; (ii) any alloy of certain specific alloy classes, such as any iron alloy or any cobalt alloy, or (iii) certain specific nickel alloys, such as any cobalt-chromium-nickel alloy, any nickel-cobalt-chromium-molybdenum alloy, or any nickel-titanium alloy. If *Olge* had contemplated using any nickel alloy, it appears that *Olge* would have included nickel alloys among the listed of acceptable alloy classes. Instead, the only alloys broadly identified as classes are “iron alloys” and “cobalt alloys”. Furthermore, if *Olge* had contemplated using a chromium-nickel alloy in particular, it appears that *Olge* would have included chromium-nickel alloys among the specifically identified nickel alloys. Instead, the only nickel alloys that are specifically identified are cobalt-chromium-nickel alloy, nickel-cobalt-chromium-molybdenum alloy, and nickel-titanium alloy. The claimed alloy, chromium-nickel alloy, is omitted.

The base references do not remedy this deficiency. *Nishijima* does not teach coating materials in particular, but it does teach certain materials for use on the contact surfaces, such as stainless steel, titanium, tantalum, platinum, and alloys thereof, and aluminum, zirconium, and ceramic materials. See *Nishijima*; col. 5, lns. 28-39. Neither chromium-nickel alloys in particular, nor nickel alloys in general, are described. Similarly, *William* teaches certain materials for use with implants, such as titanium or titanium alloys, stainless steel, cobalt-chromium alloys, vanadium, ceramic or ceramic materials, such as aluminum oxide and zirconium oxide ceramic, nickel titanium alloys, shape memory alloys, plastics, carbon fiber reinforced polymers known commercially as “Peek” (polyetherether ketone) or “Ultrapeek” (polyether ketone, ether ketone, ketone), polycarbonate, polypropylene, polyethylene, polysulfone plastics material filled with glass or carbon fibers Kevlar, composite material, various metallic alloys, elastomers, or other biologically-compatible, substantially chemically inert materials. Neither chromium-nickel alloys in particular, nor nickel alloys in general, are described. For at least these reasons, the claims would not have been obvious.

Conclusion

Applicant submits that the pending claims are novel and would not have been obvious over the references of record. Therefore, Applicant respectfully asks the Examiner to reconsider the rejections and to allow each of the claims. Applicant invites the Examiner to call the Attorney below at any time if the Examiner believes a telephone conversation would facilitate the examination of this application.

Respectfully submitted,

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